

REVISED 1998

INTERAGENCY GRIZZLY BEAR COMMITTEE TASKFORCE REPORT



Grizzly Bear/Motorized Access Management

Final Approved by IGBC
July 21, 1994

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BACKGROUND

History has demonstrated that grizzly bear populations and many of our large carnivores survived where frequencies of contact with humans were very low (Storer and Tevis 1955, Brown 1985, Servheen 1989).

Populations of grizzly bears and other large carnivores persisted in those areas where large expanses of relatively secure habitat were retained and where human induced mortality was low. In the lower 48 conterminous states, this is primarily associated with National Parks, Wilderness areas and large blocks of public lands.

The importance of managing motorized access, one of the most influential parameters affecting habitat security, has been emphasized for many species of wildlife in the Northern Rockies; most notably for grizzly bears (Mattson, et. al. 1987; Mace and Manley, 1993; USFWS 1993, Mace, et. al. 1996) and for elk (Hillis et. al. 1991, Christensen et. al. 1993). By managing motorized access on the landscape, the following grizzly bear management objectives can be met:

- Minimize human interaction and potential grizzly bear mortality
- Minimize displacement from important habitats
- Minimize habituation to humans
- Provide relatively secure habitat where energetic requirements can be met.

Historically, management of motorized use has been primarily accomplished through restriction of certain types of motorized use on established access routes. Restrictions on vehicle use through timing and type of vehicle have been commonplace. Evaluation of the effects of motorized access have been based primarily on the density of open roads.

Research has indicated that evaluation of open road density alone is not a complete measure of the effects of motorized access on use of habitat by grizzly bears (Mace and Manley 1993; Mace et. al. 1996). In addition to open road density, total motorized access route density along with the presence of core areas, are important elements in the management of human access within grizzly bear recovery zones. Core areas are free of motorized traffic and high levels of human use.

The management of human use levels through access route management is one of the most powerful tools available to balance the needs of grizzly bears, and many species of wildlife, with the needs and activities of humans. It has been documented in several research projects that human access and development within grizzly bear habitat can contribute to increased bear mortality and affect bear use of existing habitat. It is also documented that human use of grizzly bear habitat within many of our recovery zones continues to increase.

IGBC ACCESS TASKFORCE

At the request of the Interagency Grizzly Bear Committee (IGBC), this taskforce was created to evaluate current state and federal procedures for evaluating the effects of motorized access on grizzly bears within grizzly bear recovery zones. To accomplish this task, numerous documents were reviewed for consistency in methodology including USDA-Forest Service biological evaluations, USDI-Fish and Wildlife Service (USFWS) biological opinions, and Land and Resource Management Plans and Research reports. Upon completion of this review, it was readily apparent that consistent methods of analyzing and displaying the effects of human access on the quality, quantity, and distribution of habitat were lacking. The taskforce was requested to 1) establish standardized definitions for roads, i.e., open road, reclaimed road, etc., 2) standardize methods to measure road densities and define the analysis areas within which density should be measured, and 3) assure that developed definitions and procedures interface with the existing cumulative effects models. These actions were necessary to provide consistency in the evaluation of access effects on public lands. The taskforce completed the Interagency Grizzly Bear Committee Taskforce Report on Grizzly Bear/Motorized Access Management (Taskforce Report) (IGBC 1994).

In 1998, the taskforce reconvened to assess the clarity and applicability of the recommendations and definitions in the 1994 Taskforce Report. The taskforce assessed the 1994 report in light of two basic considerations: (1) experiences gained from nearly 4 years of implementation in the Northern Continental Divide Ecosystem, as well as the development of analysis and criteria for the Cabinet-Yaak and Selkirks Ecosystems, and (2) the most recent grizzly bear research information in each ecosystem. Intensive grizzly bear research has been ongoing in four grizzly bear ecosystems, the Cabinet-Yaak, Northern Continental Divide, Selkirk, and the Yellowstone. These research efforts vary in objectives, scientific methods used, intensity, and funding. As such, the data sets compiled in each ecosystem often lend themselves to dissimilar analyses with which to develop access management strategies.

This 1998 document represents the revised IGBC Taskforce Report. The overriding intent of the recommendations in this document remains the same as that in the original 1994 Taskforce Report: to provide a consistent approach to motorized access management between and within grizzly bear ecosystems. As in the 1994 Taskforce Report, these recommendations continue to utilize the three basic parameters of (1) open motorized route density, (2) total motorized route density, and (3) core area as the foundation for access management for grizzly bears. This 1998 revised report however recognizes the differences in research, data collection, and analyses between ecosystems as well as implementation issues that have arisen in the past.

Furthermore, the taskforce recommends that a supplement (appendix) to the 1998, revised Task Force Report be prepared by each subcommittee. The supplements will document and provide rationale as to how the taskforce report recommendations are being applied according to ecosystem-specific information. The supplements may be updated periodically to reflect new information in each ecosystem.

While the following definitions and procedures have been developed primarily for use in displaying effects of human access routes on grizzly bear habitat, the concepts are applicable for evaluating the effects on many other species of wildlife. Their use on private lands is encouraged.



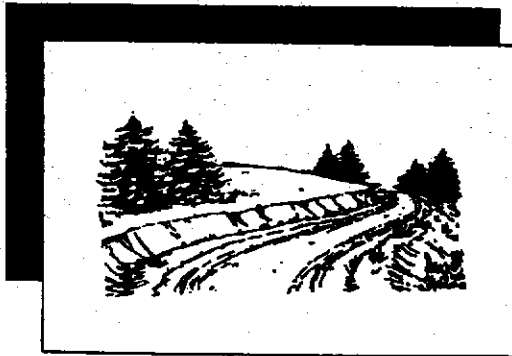
DEFINITIONS

During early review of definitions proposed by the taskforce, concerns were raised that many of the terms have already been defined locally and/or nationally, and to change the definitions of these terms would create confusion, misuse of terms, etc. After polling all the major land managers, it was apparent that consistency between land management and regulatory agencies was largely absent and that confusion, misuse of terms, etc., already existed.

It was the IGBC's intent to establish definitions and procedures that would allow for consistency among the various land management units in describing effects of human access routes on grizzly bear habitat use. This required defining access terms commonly used in biological analyses. The following definitions are recommended and are felt to cover all the various access route scenarios found within the recovery zones.

ROAD--all created or evolved routes that are >500 feet long (minimum inventory standard for the Forest Service Route Management System), which are reasonably and prudently drivable with a conventional passenger car or pickup.

OPEN ROAD--a road without restriction on motorized vehicle use.



RESTRICTED ROAD--a road on which motorized vehicle use is restricted seasonally or yearlong. The road requires *effective* physical obstruction (generally gated).*



RECLAIMED/OBLITERATED ROAD--a route which is managed with the long term intent for no motorized use, and has been treated in such a manner so as to no longer function as a road. An effective means to accomplish this is through one or a combination of several means including: recontouring to original slope, placement of logging, or forest debris, planting of shrubs or trees, etc.



The use of the term "Closed" has been improperly applied for years to what are actually "Restricted" roads. A "Closed" route or area is closed to all types of traffic including foot traffic and its use in describing roads is to be discouraged.

TRAIL--all created or evolved access routes that do not qualify as a "road." They are not reasonably and prudently drivable with a conventional passenger car or pickup.

OPEN MOTORIZED TRAIL--a trail that receives motorized use. Trails used by 4-wheelers, 4-wheel drive vehicles and motorized trail bikes are examples of this type of access route.

RESTRICTED MOTORIZED TRAIL-- a trail on which motorized use is restricted seasonally or yearlong. Motorized use is effectively/physically restricted.*

* Motorized administrative use by personnel of resource management agencies is acceptable at low intensity levels as defined in existing cumulative effects analysis models. This includes contractors and permittees in addition to agency employees.

METHODOLOGY/PROCEDURES

This section is intended to provide a structured and consistent approach to the analysis and documentation of effects of motorized access on grizzly bear habitat. The goal is to improve efficiency and consistency of effects analyses and provide quality information needed for land stewardship. Its use should be applicable to many other species and its application should be encouraged in those instances.

The recommended procedure for evaluating motorized access effects on grizzly bear habitat is as follows:

1) **Delineate the Analysis Area(s):**

Analysis areas that approximate the size of annual home ranges of an adult female grizzly bear should be delineated and used for effects analysis. The entire recovery area should be delineated in this manner. These areas will generally be the existing Bear Management Units or Subunits. They are not intended to be the actual home ranges of known adult female grizzly bears. Since analysis areas are intended to approximate home range sized areas, delineation should account for elevational and seasonal distribution of habitats when this information is available.

2) **Development of Access Route Density Maps:** Utilizing definitions found in this report develop statistics that describe Open Motorized Access Density and Total Motorized Access Density.

A) All motorized access routes will be identified and considered for inclusion in density calculations. Routes not used in calculations will be identified and the rationale for exclusion documented.

B) Open Motorized Route Density calculations will include open roads, other roads not meeting all restricted or obliterated criteria, and open motorized trails. Open motorized route density may be calculated for a season or yearlong.

C) Total Motorized Route Density calculations will include open roads, restricted roads, roads not meeting all reclaimed criteria, and all motorized trails.

D) Density calculations will use GIS moving window routines (Turner and Gardner 1990). Since the moving window routine considers routes within the "window", routes to $\frac{1}{2}$ of the window size (radius for circles or $\frac{1}{2}$ the diagonal length for squares) outside of the analysis area must be included.

E) The same GIS software and processing methods, or a suitable conversion, that was used for development, must be used for comparison of existing or future conditions, as significant

differences can occur between software packages and processing methods.

F) Statistics will display the percent of the analysis area in relevant route density classes. Class relevance will be based upon the management levels chosen by each ecosystem.

3) **Identify Existing/Potential Core Areas:** Researchers and managers throughout the recovery areas agree that core areas, areas free of motorized access during the core security period, are an important component of adult females that have successfully reared and weaned offspring. Within the analysis area, identify existing/potential areas that meet the following criteria for each season of use:

Core Area(s) Criteria:

A. No motorized use of roads and trails during the core period. Within the core area, restricted roads require effective physical closure devices.

B. No roads or trails that receive non-motorized, high intensity use as defined in established cumulative effects activity definitions.

C. Minimum of .31 miles from any open road or motorized trail. This will be accomplished by buffering all open roads and open motorized trails. Studies regarding the influence of roads on grizzly bear habitat use have provided a range of distances wherein bears appear to show avoidance. Mattson et. al. (1987) found that grizzly bears in Yellowstone National Park tended to avoid habitat within 500 M (.31 miles) of roads during spring and summer. Research in southeastern British Columbia found that grizzly bears used the area within 100 M (.06 miles) of roads less than expected on the basis of availability (McLellan and Shackleton 1988). Aune and Kasworm (1989) reported less than expected use of habitat within 200 M (.12 miles) of roads during spring, 100 M (.06 miles) during summer and 400 M (.25 miles) during autumn on the East Front study area of north central Montana. A study of road influences on grizzly bears in the Cabinet Mountains of northwest Montana indicated less than expected use within 914 M (.57 miles) of roads with nonsignificant seasonal variation (Kasworm and Manley 1990). Given this range in the zones of less than expected use (100 - 914 M), the distance of .31 miles or 500 meters was recommended.

D. Consideration should be given, when information is available to do so, to ensure that the core area(s) meet seasonal bear habitat needs by assuring that spring, summer, fall and denning

habitat within the core areas are representative of these seasonal habitats in the entire analysis area.

E. Once core areas become established and effective, these areas should remain in place for at least 10 years. This duration is based upon the generation time for a female grizzly bear or the time it takes a female grizzly bear to replace herself.

4) **Define Acceptable Level(s) of Motorized Access:**

The IGBC requested that the individual grizzly bear management subcommittees define and recommend the habitat conditions that should be maintained to provide habitat security for the grizzly bear.

Habitat security conditions cannot be defined entirely by motorized access route density. Other factors such as vegetation (food, cover), concentrated human use locations (e.g., town sites, campgrounds), heavily used non-motorized trails and areas of high levels of dispersed human use will also influence the effectiveness of area in regards to habitat security. However, motorized access routes and the human use associated with these routes are one of the most easily defined and measurable factors that we can evaluate. Motorized access is also one of the more influential parameters affecting habitat security.

The following parameters are recommended to be included as part of analyses regarding motorized access and its effect on habitat security for grizzly bears:

TOTAL MOTORIZED ROUTE DENSITY - Includes open and restricted roads and motorized trails. Density is displayed as a percentage of the analysis area in a defined density category. Example 20% >2.0 miles per sq. mile

OPEN MOTORIZED ROUTE DENSITY - Includes open roads and open motorized trails. Density is displayed as a percentage of the analysis area in a defined density category.

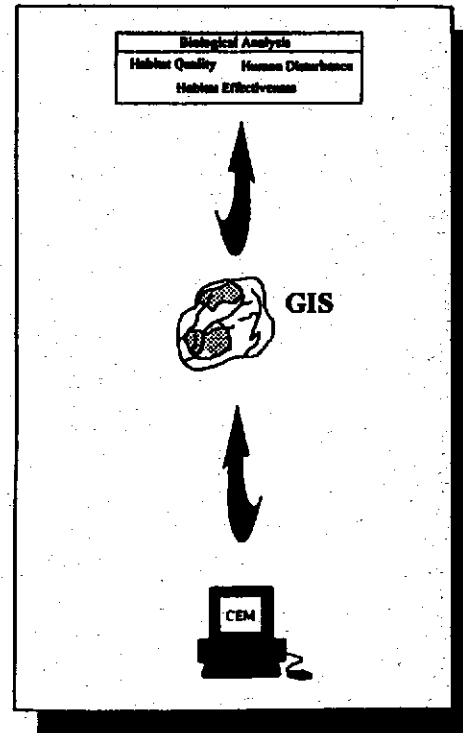
PERCENTAGE OF ANALYSIS AREA IN CORE AREA(S) - Percentage of the analysis area that meets core area criteria. Size and connectivity of patches will be established at the recovery area level.

Based on the best available information, each of the individual IGBC recovery area subcommittees will display for known adult female grizzly bears the above listed parameters. With this biological information, along with other research results and with social and other land management considerations, the individual subcommittees would recommend the level(s) at which parameters should be managed.

CUMULATIVE EFFECTS INTERFACE

The IGBC requested that definitions and procedures recommended by this taskforce interface with existing cumulative effects models (CEM). There have been concerns raised that the above procedures would replace cumulative effects analyses procedures currently approved and in place. This is not the case. The current version of CEMs provides for the preparation of GIS based maps and numeric outputs of the parameters recommended for inclusion in effects analysis.


One of the basic outputs of a CEM model and the most often referenced is habitat effectiveness. This output reflects the area's ability to support bears given the quality of habitat and the cumulative human disturbances imposed upon the area. This output will still be important to biologists and managers in the preparation of biological analyses. The recommendation that additional parameters be measured will allow managers to take a more refined look at how motorized activities are affecting grizzly bear habitat.



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"One of the most insidious invasions of wilderness is via predator control. It works thus: wolves and lions are cleaned out of a wilderness area in the interest of big-game management. The big-game herds (usually deer or elk) then increase to the point of overbrowsing the range. Hunters must then be encouraged to harvest the surplus, but modern hunters refuse to operate far from a car; hence a road must be built to provide access to the surplus game. Again and again wilderness areas have been split by this process, but it still continues." Aldo Leopold, A Sand County Almanac, 1949.

"We have also created technologies that make virtually every place on this planet accessible to us. With our curiosity, money, leisure time, and motorized contraptions, we can invade any corner of the earth with impunity... That we can alter human behavior to protect wildland ecosystems and wild animals is reason for hope." Hal Salwasser, Interagency Grizzly Bear Committee Meeting, Denver, December 9, 1997.

